

Claims:

1. Curtain coater for coating a moving web (2) of paper or board, the curtain coater comprising an applicator nozzle (1) located above the web (2) to be coated so as to apply the coating mix therefrom to the surface of the web (2) in the form of a continuous curtain extending uniformly over the cross-machine width of the web (2), characterized by a doctoring means (3) serving to remove the boundary air layer traveling on the surface of the web (2) by being located upstream in the travel direction of the web (2) in front of the impingement point of the coating mix curtain on the surface of the web (2) and further being located on the same side of the web (2) as the applicator nozzle (1).
2. Curtain coater for coating a moving web (2) of paper or board, the curtain coater comprising an applicator nozzle (1) located above the web (2) to be coated so as to apply the coating mix therefrom to the surface of the web (2) in the form of a continuous curtain extending uniformly over the cross-machine width of the web (2), characterized by a gas-injection nozzle (5) located downstream in the travel direction of the web (2) after the applicator nozzle (1) so as to extend over the cross-machine width of the web (2) and adapted to blow gas via said gas-injection nozzle toward the coating mix curtain being applied from the applicator nozzle (1).
3. Curtain coater according to claim 1, characterized by a gas-injection nozzle (5) located downstream in the travel direction of the web (2) after

the applicator nozzle (1) so as to extend over the cross-machine width of the web (2) and adapted to blow gas via said gas-injection nozzle toward the coating mix curtain being applied from the applicator nozzle (1).

5

4. Curtain coater according to claim 1 or 3, characterized by a suction nozzle (4) extending over the cross-machine width of the web (2) and adapted to said doctoring means (3) so as to remove by suction the 10 boundary air layer traveling on the surface of the web (2).

5. Curtain coater according to claim 4, characterized in that the inlet opening (6) of the 15 suction nozzle (4) is adapted to rear wall of the doctoring means (3).

6. Curtain coater according to claim 4 or 5, characterized in that the inlet opening (6) of the 20 suction nozzle (4) is adapted to the surface of the doctoring means (3) facing the web (2).

7. Curtain coater according to any one of foregoing claims, characterized in that the surface 25 of the doctoring means (3) facing the web (2) has a curved shape.

8. Curtain coater according to claim 7, characterized in that the distance of the web (2) from 30 the curved surface of the doctoring means (3) is in the range of 0-500 μm .

10

9. Curtain coater according to any one of foregoing claims, characterized in that said doctoring means (3) is a doctor bar.

5 10. Curtain coater according to any one of foregoing claims, characterized in that the distance along the surface of the web (2) from the doctoring point of said doctoring means (3) to the application point under said applicator nozzle (1) is less than 50 mm.

10

11. Curtain-coating method for coating a moving web (2) of paper or board, in which method

15

- the web (2) to be coated is passed to a coater station, and

- using an applicator nozzle (1) located above the web (2), the coating mix is therefrom applied to the surface of the web (2) in the form of a continuous curtain extending uniformly over the

20

cross-machine width of the web (2),

characterized in that the boundary air layer traveling along with the web is removed from the surface of the web (2) facing said applicator nozzle (1) with the help of a doctoring means (3) located upstream in the travel direction of the web (2) in front of the applicator nozzle (1).

30 12. Curtain-coating method for coating a moving web (2) of paper or board, in which method

- the web (2) to be coated is passed to a coater station, and
- using an applicator nozzle (1) located above the web (2), the coating mix is therefrom applied to the surface of the web (2) in the form of a continuous curtain extending uniformly over the cross-machine width of the web (2),

5 10 c h a r a c t e r i z e d in that gas is blown toward the coating mix curtain being applied from the applicator nozzle (1) from a gas-injection nozzle (5) that is located downstream in the travel direction of the web (2) after the applicator nozzle (1) and is adapted to extend 15 over the cross-machine width of the web (2).

13. Curtain-coating method according to claim 11, 20 c h a r a c t e r i z e d in that gas is blown toward the coating mix curtain being applied from the applicator nozzle (1) from a gas-injection nozzle (5) that is located downstream in the travel direction of the web (2) after the applicator nozzle (1) and is adapted to extend over the cross-machine width of the web (2).

25 14. Curtain-coating method according to claim 11 or 13, c h a r a c t e r i z e d in that the boundary air layer traveling on the surface of the web (2) is removed by suction applied by a suction nozzle (4) adapted to said doctoring means (3).

Claims:

1. Curtain coater for coating a moving web (2) of paper or board, the curtain coater comprising an applicator nozzle (1) located above the web (2) to be coated so as to apply the coating mix therefrom to the surface of the web (2) in the form of a continuous curtain extending uniformly over the cross-machine width of the web (2), characterized by a doctoring means (3) serving to remove the boundary air layer traveling on the surface of the web (2) by being located upstream in the travel direction of the web (2) in front of the impingement point of the coating mix curtain on the surface of the web (2) and further being located on the same side of the web (2) as the applicator nozzle (1).
2. Curtain coater for coating a moving web (2) of paper or board, the curtain coater comprising an applicator nozzle (1) located above the web (2) to be coated so as to apply the coating mix therefrom to the surface of the web (2) in the form of a continuous curtain extending uniformly over the cross-machine width of the web (2), characterized by a gas-injection nozzle (5) located downstream in the travel direction of the web (2) after the applicator nozzle (1) so as to extend over the cross-machine width of the web (2) and adapted to blow gas via said gas-injection nozzle toward the coating mix curtain being applied from the applicator nozzle (1).
3. Curtain coater according to claim 1, characterized by a gas-injection nozzle (5) located downstream in the travel direction of the web (2) after

the applicator nozzle (1) so as to extend over the cross-machine width of the web (2) and adapted to blow gas via said gas-injection nozzle toward the coating mix curtain being applied from the applicator nozzle (1).

5

4. Curtain coater according to claim 1 or 3, characterized by a suction nozzle (4) extending over the cross-machine width of the web (2) and adapted to said doctoring means (3) so as to remove by suction the boundary air layer traveling on the surface of the web (2).

10

5. Curtain coater according to claim 4, characterized in that the inlet opening (6) of the suction nozzle (4) is adapted to rear wall of the doctoring means (3).

15

6. Curtain coater according to claim 4 or 5, characterized in that the inlet opening (6) of the suction nozzle (4) is adapted to the surface of the doctoring means (3) facing the web (2).

20

7. Curtain coater according to any one of foregoing claims, characterized in that the surface of the doctoring means (3) facing the web (2) has a curved shape.

25

8. Curtain coater according to claim 7, characterized in that the distance of the web (2) from the curved surface of the doctoring means (3) is in the range of 0-500 μm .

30

9. Curtain coater according to any one of foregoing claims, characterized in that said doctoring means (3) is a doctor bar.

5 10. Curtain coater according to any one of foregoing claims, characterized in that the distance along the surface of the web (2) from the doctoring point of said doctoring means (3) to the application point under said applicator nozzle (1) is less than 50 mm.

10

11. Curtain-coating method for coating a moving web (2) of paper or board, in which method

15

- the web (2) to be coated is passed to a coater station, and

20

- using an applicator nozzle (1) located above the web (2), the coating mix is therefrom applied to the surface of the web (2) in the form of a continuous curtain extending uniformly over the cross-machine width of the web (2),

25

characterized in that the boundary air layer traveling along with the web is removed from the surface of the web (2) facing said applicator nozzle (1) with the help of a doctoring means (3) located upstream in the travel direction of the web (2) in front of the applicator nozzle (1).

30 12. Curtain-coating method for coating a moving web (2) of paper or board, in which method

- the web (2) to be coated is passed to a coater station, and
- using an applicator nozzle (1) located above the web (2), the coating mix is therefrom applied to the surface of the web (2) in the form of a continuous curtain extending uniformly over the cross-machine width of the web (2),

5 10 characterized in that gas is blown toward the coating mix curtain being applied from the applicator nozzle (1) from a gas-injection nozzle (5) that is located downstream in the travel direction of the web (2) after the applicator nozzle (1) and is adapted to extend 15 over the cross-machine width of the web (2).

13. Curtain-coating method according to claim 11, 20 characterized in that gas is blown toward the coating mix curtain being applied from the applicator nozzle (1) from a gas-injection nozzle (5) that is located downstream in the travel direction of the web (2) after the applicator nozzle (1) and is adapted to extend over the cross-machine width of the web (2).

25 14. Curtain-coating method according to claim 11 or 13, characterized in that the boundary air layer traveling on the surface of the web (2) is removed by suction applied by a suction nozzle (4) adapted to said doctoring means (3).